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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/711,485 | 09/21/2004 | Suhwan Kim | BUR920030021US1 | 5484 |
| 24241 | 7590 | 08/21/2006 | EXAMINER | |
| IBM MICROELECTRONICS INTELLECTUAL PROPERTY LAW 1000 RIVER STREET 972 E ESSEX JUNCTION, VT 05452 | | | BAE, JI H | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2115 | |
| DATE MAILED: 08/21/2006 | | | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/711,485

Applicant(s)

KIM ET AL.

Examiner

Ji H. Bae

Art Unit

2115

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 11 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 11 recites a method of controlling power consumption in an integrated circuit. However, the steps recited do not achieve the claimed goal as stated in the preamble. Although applicant has recited a number of steps that are implemented in the circuit, there is nothing in the steps that enables a power controlling capability.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 11-13, 15, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Morrow et al., U.S. Patent Application Publication No. 2002/0124196 A1.

Regarding claim 11, Morrow teaches a method with steps comprising:

communicating tasks for execution [interrupt, Fig. 5];

creating a designated unit capable of processing the communicated tasks [Fig. 1, P2, high performance microprocessor, paragraph 37];

Art Unit: 2115

creating a complementary unit for the designated unit [Fig. 1, P1, low performance microprocessor, paragraph 37], the complementary unit receiving the tasks and either executing the communicated tasks itself or providing the communicated tasks to the designated unit for execution.

Examiner notes Morrow's disclosure that the scheduling unit SCH, which communicates the tasks to either of P1 or P2, is implemented at part of either P1 or P2 in alternative embodiments [paragraph 39]. Thus, the complementary unit receives the tasks and executes them or provides them to the designated unit.

Regarding claim 12, Morrow teaches:

receiving a communicated task with the complementary unit; and
selecting, using the complementary unit, the task for execution by the complementary unit or the designated unit depending on which selection will save power [paragraph 42].

Regarding claims 13 and 15, Morrow teaches selecting either the complementary unit or the designated unit for executing the communicated task.

Regarding claim 17, Morrow teaches:

a designated unit capable of executing a set of tasks [P2];
a complementary unit [P1] capable of selecting either itself or the designated unit for execution of a received task, the complementary unit using less power than the designated unit would for execution of the same task.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

Art Unit: 2115

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-10, 14, 16, and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Morrow in view of Perry et al., U.S. Patent No. 5,142,684.

Regarding claim 1, Morrow teaches a communication device, designated unit and complementary unit as demonstrated in the rejection of claims 11, 12, 13, 15, and 17. Morrow does not teach a power regulator.

Perry teaches a power regulator [Fig. 1, adjustable switching regulator] capable of regulating the power supplied to the designated unit [col. 4, lines 64-68].

It would have been obvious to one of ordinary skill in the art to combine the teachings of Morrow and Perry by including the power control circuitry of Morrow in the system of Perry. Both Morrow and Perry teach systems with two processors, each operating at a different level of performance. Morrow and Perry also both teach the communication of tasks to one of the other processor depending on the level of performance required. The teachings of Perry would improve the system of Morrow by providing additional control over the power, which would enable the saving of power when high performance tasks are not required [col. 2, lines 32-38].

Regarding claims 2 and 6, Perry teaches:

circuits capable of controlling the clock speed of the internal unit of the designated unit for desired performance requirements [col. 2, lines 59-63].

Regarding claims 3, 7, and 19, Perry teaches:

voltage controlling circuitry capable of controlling the voltage supplied to the voltage controllable unit [col. 4, lines 64-68].

Regarding claims 4 and 8, Morrow teaches:

a universal interrupt controller capable of communicating tasks supported by the designated unit that are ready for execution [SCH, paragraphs 37, 39].

Art Unit: 2115

Regarding claims 5 and 18, Perry teaches:

power controlling circuitry capable of powering-up and powering-down the designated unit using the power regulator [col. 2, lines 43-46].

Regarding claims 9 and 10, Morrow teaches that the complementary unit is capable of executing all or a subset of the communicated tasks.

Regarding claims 14 and 16, Perry teaches the step of powering up and powering down the designated unit.

Regarding claims 20 and 21, Perry teaches controlling the voltage in order to save power.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Tjandrasuwita, U.S. Patent No. 6,212,645 B1;

Cai, U.S. Patent No. 6,501,999 B1;

White et al., U.S. Patent No. 5,410,713;

Cheng, U.S. Patent No. 6,836,850 B2;

Lin, U.S. Patent No. 5,452,401;

Huang, U.S. Patent No. 6,035,408;

Ohtsuki, U.S. Patent No. 5,471,621;

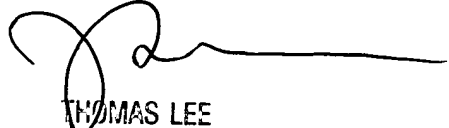
Barber et al., U.S. Patent No. 6,240,521 B1.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ji H. Bae whose telephone number is 571-272-7181. The examiner can normally be reached on Monday-Friday, 10 am to 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Lee can be reached on 571-272-3667. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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